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COMMODORE INTERNATIONAL, LTD:

BUSINESS ASSESSMENT UPDATE

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FILE
MKT RESEARCH

Prepared for:

THE BAYERISCHE VEREINSBANK

Munich

Prepared by:

SUMMARY

- GREAT MACHINE
- WHAT IS IT?
- IS IT PRACTICAL TO EXPECT WE CAN EXPLOIT END USERS MACHINE HAS GREATEST APPEAL FOR PRICED TOO HIGH FOR CONSUMER MKT.

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I INTRODUCTION

is pleased to submit this report to the Bayerische Vereinsbank as a result of its request for an updated assessment of the prospects for Commodore International, Ltd. As we did in our initial assessment of Commodore, we have relied substantially on:

- Research materials readily available within
- Supplementary documents from reliable, outside sources
- The judgment of professionals knowledgeable in the area under investigation.

II EXECUTIVE SUMMARY

Statements that follow are based on second-hand knowledge of Commodore's current situation. Analysis is based on the qualification that further acquaintance with Commodore's plans might nullify the analysis and specific recommendations.

Strengths

- Amiga is a technically strong product
- It appears advantageously priced compared to other vendors hardware
- Amiga can be made IBM compatible
- Individual software developers appear to be buying the product.

Weaknesses

- Lack of value-added features may force Commodore to price its product low.
- Low price combined with Commodore's reputation as a "home-computer company" has caused credibility problems in the business market.
- Commodore's inventory of software and planned software introductions are aimed at the home market. Yet, the home market is experiencing a slowdown, facing serious competition from Apple, and consumers have not demonstrated their willingness to buy a product in the price range of the Amiga as yet.
- Though Commodore has recognized its possible appeal to vertical markets, neither its family of planned software introductions nor its marketing and distribution actions appear directed at vertical markets.
- There is no Unix-compatibility or networking capability for the Amiga as yet—Unix is becoming a second standard.
- There appears to be no peripherals strategy which is critical to success in vertical markets.

NOR DO WE IN THE MIDST OF HAVE THE TYPE OF RETAILER TO DO THIS!

- Commodore has stated an interest in specific vertical markets that fit Amiga's profile. However, there appears to be no focused implementation strategy to capitalize on these markets.

- In the near-term Christmas market, Commodore may not be able to fulfill orders because of their 90-day noncancellable policy, no minimum order policy, and apparent inability to physically deliver the product on schedule.

- Commodore may have lost the in-plant publishing market to Apple and it may need to focus on markets not infiltrated by the Macintosh product.

- Introduction of the Commodore 128 product may have reduced the value of 64 inventory being held; depending on how the inventory has been valued, assets may be overstated.

- The 128 provides some upgraded advances from the 64; however, upgrade advances to the Amiga would be a more selleable upgrade.

- Performance for Commodore in the Christmas season may be hurt by IBM's PCjr liquidation sales and Apple's price and value-added services push to gain Christmas market share.

Possible Strategies for Commodore

- Immediately identify those markets that are likely to optimally utililze Amiga's hardware/software strengths.

- Clearly identify user requirements within each of those markets.

- Quickly negotiate vendor agreements to provide peripheral power to the Amiga product (scanners, printers, storage devices, keyboards, display devices, software).

- For applications software, develop partnership arrangements with leading value-added resellers.

- Package the Amiga with specific peripherals and software targeted at each market niche.

- Develop a value-added reseller network (as well as a horizontal dealer network) to sell to each market niche.

- Position the Amiga appropriately for each market. Sell the Amiga at a higher price--with that price, inclusive of necessary peripherals, directed at that target market.

- Continue the open architecture strategy and the dealer network strategy; continue to encourage individual software developers to write software for the Amiga.

Recommendations to Commodore

1) Conduct a fast-turnaround market survey to ascertain that vertical markets offer sufficient revenue potential to justify continued investment.

2) Determine if the possibly significant investment in implementing a vertical market strategy will cover costs and profits.

3) Carefully plan the vertical market structure; pay specific attention to channel requirements and to establishing a value-added reseller network.

III THE AMIGA PERSONAL COMPUTER

On July 23, 1985, the much anticipated Amiga personal computer (PC) was formally announced to the press and financial community in New York City. Viewed as a "second-generation Macintosh," the Amiga is considered to be one of the most powerful 68000-based PCs thus far introduced. Commodore is emphasizing that the system is very fast, is color-oriented, generates graphics via a custom chip set, and contains a completely open architecture that gives full access to the capability of the 68000 microprocessor. PC-DOS software programs provide 95% compatibility with the IBM PC.

Commodore hopes that Amiga will serve as a catalyst to revive the declining home market and to provide the company with an entry to small-business and specialized vertical markets. Commodore expects the Amiga to pose a direct threat to Apple's Macintosh and Apple II lines.

After initial reviews, industry experts praised the technical capabilities of the Amiga, particularly its hardware features. However, the industry has learned to view the promise of technology for its own sake with caution. (The Macintosh has not "saved" Apple, and Mindset, a start-up company marketing an IBM-compatible PC with sophisticated graphics, was unable in 1984 to find an appropriate niche for its machine.) Amiga's major selling points and needs today are discussed below.

Amiga Selling Points

Low Price

The basic system unit of the Amiga (256 kilobyte system box, built-in 3.5-inch disk drive, keyboard, and mouse) is priced at $1,295.* A separate 13-inch color monitor with stereophonic speakers designed for use with the system is priced at $495—for a minimum configuration price of $1,790. A fully loaded system (with 512K memory, built-in disk drive, mouse, software, color monitor) is priced at $1,985. More detailed product specifications are listed in the appendix.

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*All figures are given in U.S. dollars unless noted otherwise.

Multitasking Windowing Environment

The Amiga system allows several windows tc be open at one time, and each can perform a different operation in a multitasking environment. The system also allows a combination of text and graphics windows to be open at the same time. This is not a feature currently offered by Apple's Macintosh.

Open Architecture

The Amiga was specifically designed to provide software developers with a completely open and expandable system. The system has a memory expansion capability of up to 8 megabytes (MB) of random access memory (RAM) through a system expansion port.

High-Resolution Color Graphics

Color is a major feature of the Amiga; it has a palette of 4,096 colors, 32 of which can be displayed on the screen at any one time. The highest resolution of 640 x 400 pixels limits the use of the system in professional graphics studios, but it is more than adequate for home use.

Sprites and Animation

The Amiga offers as many as eight sprites (precoded graphic sequences) that can be used alone or in combination to move and animate characters across the screen. Each sprite can incorporate as many as three colors.

Operating System

Amiga DOS, executed by Metacomco of Bristol, England, supports a true multitasking/windowing environment. In tests, the window management system, called Intuition, has run as many as 50 independent windows simultaneously. The user interface, called Workbench, uses icons and pull-down menus that are selected and activated with a mouse.

Sound

A unique feature of the Amiga is its sound-generating capability. It can synthesize and digitize sounds, and can play them back with high fidelity through stereophonic outputs. The alphanumeric keyboard can be played like a musical keyboard while the system synthesizes a variety of musical instruments. Complex waveforms can be processed, and chords as well as single notes can be played. Finally, the system

IV MARKET SEGMENTS

Commodore expects the home market to be the first and biggest market for the Amiga. Software that meets business and vertical market needs is expected to take longer to develop. Initially, therefore, Commodore expects about 60% of all Amigas to be sold to the home environment, with the remaining 40% to business. By year-end 1985, Commodore expects these proportions to reverse.

Commodore views the home market as consisting of five distinct segments: (1) businesses run from the home, (2) office work done at home, (3) telecommunications, (4) education, and (5) entertainment.

To attract home computer buyers for business applications, Commodore has relied heavily on features similar to those of the Macintosh, and it is positioned to exploit the market composed of demanding home computer buyers that IBM and Apple started to appeal to in 1984. Commodore is assuming that sufficient demand will be generated on the basis of price and superior performance. Commodore's strategy is to attract would-be IBM/Apple purchasers (1) by offering a more powerful basic computer and (2) by providing a color display and a hardware option that will allow the Amiga to run IBM PC software. For the "work-at-home" computer user, the necessity for sophisticated sound and color visual features is questionable, however. Rather, the machine may appeal more to affluent consumers who can afford a high-priced Christmas item. The unit's sound, music, and animation capabilities may intrigue certain hobbyist segments, but the market size they represent is unknown. For home educational uses, the Amiga will compete against a range of Apple II's that cost considerably less and for which substantially more software exists.

Commodore believes that the Amiga will be well suited to such vertical markets as graphics-intensive applications, including computer-aided design (CAD), advertising, graphic arts, audiovisual arts, and other "design processing" activities. Although the Amiga can quickly move images around the screen, with 1,024 by 1,024-pixel graphics boards now available for the IBM PC, the Amiga will require higher resolutions to become a feasible alternative.

Software

Much speculation surrounds the type and amount of software that will be available for the Amiga. Initially, software availability will be a problem for Commodore because a new operating system requires time to build a base of products. Some of the programs that had been

expected to be available by now have been delayed. Most of the programs announced for the Amiga are games, programming languages, and programming tools—not applications. Moreover, few large software companies are developing programs for the Amiga.

Those companies most eager to provide software for the Amiga are game software developers. One in particular, Electronic Arts (San Mateo, California), views the Amiga as surpassing the limited graphics and sound of computers such as the Apple II. They are scheduled to ship six programs for the Amiga at the end of November 1985. In a recent software developer's conference for the Amiga (July 1985), most software companies sent only one programmer; Electronic Arts sent 20.

Commodore's success in developing software for the Amiga has been limited to date to agreements with small developers interested in nurturing primarily home market applications for the machines additional capabilities. Big software companies, for the most part, are taking a "wait-and-see attitude." More importantly, commitments to developing productivity software is still limited, but this will be needed to establish the system in any business environment.

A major challenge for Commodore will thus be to convince developers to write quality applications software for the Amiga. Developers who have worked with the computer claim that it is easier to use than its rival, the Macintosh. Another positive feature of the Amiga is its open architecture, which allows a combination of hardware and software to be developed to enhance and extend its capability. This should encourage the development of software for the system. However, it will not result in immediate product sales in large volumes. In fact, SRI interviews with dealers suggest that the group demonstrating the greatest interest in and sales of the Amiga are invididual software developers and hobbyists.

Commodore's list of software that developers intended to make available at product introduction or thereafter is presented in the appendix.

Distribution Channels

Commodore believes that the Amiga cannot be successfully marketed through the mass market outlets that have been the dominant channel for the Commodore 64. Because of Commodore's sudden shift from computer specialty shops to mass market outlets several years ago, Commodore now has extremely poor relations with most computer specialty retailers. Therefore, a return to the computer specialty channel to market the Amiga will be difficult.

Although Commodore claims that selling the Amiga through computer specialty stores and the 128 through mass merchandisers gives the company coverage in both channels, this approach will mean that

Commodore will have to divide service, support, and distribution between the two channels. This may strain Commodore resources particularly because it has traditionally provided minimal customer support.

By late September 1985, Commodore had indicated (in a full-page advertisement in the Wall Street Journal) that 662 dealers were committed to the Amiga. Commodore continues to recruit dealers for the 1985 Christmas buying season. Faced with strong reluctance from dealers, Commodore's goal is to have a total of 1,200 to 1,500 dealers by mid-1986. As of this writing, 85 more stores have agreed to handle the Amiga, for a total of nearly 750. (By comparison, about 2,500 dealers sell the IBM personal computer.)

Equally important is the type of dealers being selected. Although individual dealers in some of the major chains have agreed to sell the Amiga, most are smaller concerns; the largest chains (Computerland, Businessland, Entré) are not among Commodore's dealers. How does this approach fit into the company's strategy of pursuing vertical markets? Furthermore, are the dealers that have been selected knowledgeable in the training and support required to meet vertical market needs?

SRI interviews conducted with dealers revealed a variety of reasons about why they have chosen not to carry the Amiga:

- Lack of "big-name" software for the machine
- Concern about Commodore's financial status
- Dislike of the company's insistence that dealers commit to noncancellable 90-day orders
- Hesitancy to pioneer any new model in an uncertain market, even though they were impressed with the Amiga
- Reluctance to stock the Amiga because of disputes with Commodore's former management.

On the other hand, dealers are encouraged that Commodore is not requiring a minimum dealer order. Thus dealers do not have to make a large commitment to the product.

Dealers that SRI contacted locally indicated that Amiga shipments had been delayed with some units not expected for another 2 weeks. These shipment delays (compounded by the paucity of good software and a less than ideal distribution network) may cause Commodore to lose the Christmas impulse sales because of insufficient inventories on dealers' shelves.

V MARKETING STRATEGIES: CHRISTMAS SEASON, 1985

Traditionally, computer industry sales in October and November run double the monthly sales for the previous 9 months, and December sales triple the monthly average. The first 9 months of 1985 have witnessed disappointing sales, and Commodore and its competitors therefore hope to achieve the customary end-of-year sales.

During the Christmas sales season, computer manufacturers will lower prices, increase advertising efforts, add new products to retailers' shelves, and promote products with additional advertising. To encourage customer spending, each company will attempt to offer the best new products, prices, and features.

Commodore

Commodore is differentiating its product in its print advertisements by emphasizing its hardware enhancements over competitor's products. Commodore is also relying on competitive pricing to sell its products. One of Commodore's oldest computers, the VIC-20, is priced at $80 or less; Commodore 64s (although priced at $149) are likely to be discounted to $99. Prospective buyers will probably be able to find Commodore 128s for less than the suggested retail price of $299, and the Amiga is being marketed as offering more capabilities than the Macintosh, but at a lower price.

In late September this year, recognizing the importance of market awareness, Commodore initiated a $40 million marketing plan for the Amiga (versus Apple's $100 million advertising budget for the Macintosh in 1984, and $200 million for 1985). The majority of the $40 million marketing budget will be devoted to network television, radio, and print advertising under the directio of Ted Bates Advertising, New York City; most of this amount will be spent before the end of 1985. Needless to say, financial difficulties could not have come at a worse time than at the launching of a major advertising campaign.

IBM

IBM recently expanded its line of PC XT and PC AT computers and is expected to make substantial end-of-the-year sales to businesses. A leading market research firm expects that IBM will sell 2.5 million PCs in 1985 and that as much as 45% of them will be sold from now through December. An estimated 60% of IBM's PC sales will be to businesses.

IBM has already launched rebate programs that give dealers $250 to $300 off XTs, ATs, and PC Jrs if they order at least 70% of the amount they sold in the first half of the year. To sell off as many as 200,000 PC Jrs (production ceased earlier this year), IBM is expected to cut the price to as low as $500 per unit (a measure that may adversely affect 128 sales).

Apple

In anticipation of the Christmas season, Apple has made a series of price cuts and introduced nine new peripheral products. The new peripherals bring color to the IIC computer, more internal memory to the IIe, and greater storage capacity for the Macintosh. Apple is directing particular attention to the first-time buyer. The company is also providing enhancements to its current products, and the new peripherals give dealers an opportunity to mix and match an unprecedented variety of Apple components and computer systems for a range of prices. Although it is not expected to result in substantially reduced sales for Apple in the home computer market, the Amiga will compete with the Macintosh in terms of price, speed, graphics, functionality, and color.

Apple is providing significant value-added support and services to its dealers. Its marketing strategy features sophisticated point-of-sales support that includes ready-made wrapping for all Apple boxes, Christmas cards that outline 12 reasons to buy Apples, and posters that try to undermine competitors' products. Apple's television/radio campaign is aimed directly at the home market for business and educational computing.

However, Apple is struggling against a decline in demand in the home market and an identification problem in the business market. Commodore is coming into the market with a product similar to the Apple line, and we see no reason to suggest that Commodore will fare any better.

Atari

Atari's marketing strategy is to stress the price-performance advantage of the 520 ST. Depending on whether buyers opt for a color or monochrome screen, the price of the Atari product will be $1,000 or $800 compared with $2,499 for the Macintosh, even though both units have the same user memory and similar ease of use. Atari's advertisements attack its competition by focusing on each competitor's system with the comment "There's only one word for these prices: Ripoff."

Atari's 520 ST will appeal primarily to first-time users, given its low price and power. But most users now want a more powerful computer than the Atari 520 ST, and it is therefore not expected to achieve high-volume Christmas sales.

Despite positive reviews from software developers and industry observers, Atari's ability to introduce the ST successfully is in serious doubt. Thus far, the small number of STs sold, combined with low-key advertising, have not initiated a significant increase in sales.

Nor has Atari signed any major chains to handle the 520 ST, and achieving widespread retail distribution may prove more difficult than it does for Commodore. This situation results, in part, because of former Commodore founder Tramiel's vacillation in choosing channels for distribution, thereby making retailers uneasy.

VI PROSPECTS FOR THE COMMODORE PRODUCT LINE

Analysts and developers view the Amiga as a technically outstanding computer. Its many features make it attractive to all segments of the marketplace. Nevertheless, Commodore must overcome critical challenges.

The Amiga must surmount the stigma of being a Commodore machine. Since the advent of the VIC 20 and Commodore 64, the company has had the image of offering an entertainment and low-end product. Review of the software in the appendix shows that comparable software to that offered for the two products is also offered for the Amiga. If Commodore wishes to establish Amiga in the small business market, it will have to provide more software from major developers for general markets as quickly as possible.

The Amiga also will have to establish enough momentum early on to provide Commodore with financial leverage to foster further system development. Yet, because of the Amiga's low price, Commodore must count on volume sales for success.

The Amiga is also priced less than Macintosh, and this may lead to a perception that the Amiga offers less value as a business machine, rather than more power per dollar. At the same time, the Amiga is priced too high for the home market (except as a high-end consumer gift item for the affluent, hobbyists, and videophiles); the major competition in this market may be the Atari ST system or Commodore's own product, the Commodore 128.

One of the biggest challenges for Commodore will be in reestablishing ties with computer specialty stores and independent dealers. Commodore is offering relatively high margins in lieu of quantity discounts, thereby giving dealers some flexibility in pricing. Commodore is also offering a substantial cooperative advertising program. To build Amiga sales through future generations and enhancements, (this first product is intended to be only the first of many systems in an advanced line of computers) Commodore must establish a wide base of retail dealers.

For the Amiga to be differentiated in the market as more than a Macintosh duplicate, Commodore must quickly establish a base of software that takes advantage of its speed, multitasking, high-resolution graphics, and animation; sound and speech synthesis; and other features. Early purchasers will be attracted to the Amiga on the basis of its potential. To attract the larger, broader, and more skeptical segment of the market will require more emphasis on real utility. If this general market fails to respond, Commodore may have to direct increasing attention to applications for market niches to which Amiga may be suited.

In summary, if Commodore can recruit enough software developers, find sufficient dealers, and not compete with itself in the home market, the Amiga probably will experience a measure of market success.

Commodore 128 Personal Computer

System features of the Commodore 128 PC include:

- 128K RAM memory; expandable to 512K
- Optional disk drive
- Off-the-shelf CP/M software such as Wordstar and dBaseIII
- Compatiblity with Commodore 64 software and peripherals
- Optional color graphics.

The 128, which is sold exclusively through some 10,000 mass merchandising outlets, appeals to first-time computer buyers desiring a low-end, inexpensive device for home use. Priced at $299.95 (without monitor or disk drive), this machine serves to replace the Commodore 64, a machine that dominated the home computer market until last year when sales finally leveled off. Users of the 64, however, may choose to upgrade their system beyond the 128 capabilities.

For the C-128, Commodore initiated a network television campaign in September 1985, targeted at back-to-school sales. Television commercials compare the machine with Apple's IIC ($1,249 with color monitor; $995 with black and white monitor). The C-128 will compete against a machine that has made considerable inroads into the home and educational computing markets.

The prospects of the C-128 remain uncertain, given the current confused state of the home computer market. Many believe the home computer effectively disappeared after 1984 and significant price reductions may be required to rejuvenate the market.

Overall Product Line Strategy

The Amiga is regarded as an entry-level system, the first in a projected line of high-end products based on the same basic architecture. Despite the interest in Commodore's newest product, the company is determined to maintain its dominant position in low-end home computer systems and in the marketing channels that sell them. Although the Amiga will undoubtedly become Commodore's primary product, other new additions to the Commodore product line, will also receive ample attention. In addition, they will provide needed near-term revenue for Commodore. The Commodore 64 will continue to be sold as a basic entry-level home system, and marketing of the Plus 4 and C16 will shift to less developed international markets. In Europe, Commodore maintains a strong presence in the business market with its PC-10 and PC-20, which are low-priced IBM PC compatibles, and the recently introduced C900, an eight-user UNIX-based system that features 1,024 x 800-pixel graphics and sells for about $5,000. The Amiga will also be introduced in Europe at a later date.

VII FINANCIAL STATUS

The notes accompanying the fiscal 1985 financial statements adequately indicate Commodore's current position and key risks. SRI could not conduct product revenue sensitivity analyses with the information available, but we believe the percentage effects are reasonable. Revenue fluctuation is probably the major risk to financial results.

A second risk that must be considered is the value of inventory, which is reported at approximately $315 million (after an $87 million writedown). The composition of inventory and near-term marketing opportunities, on each thereof, can strongly affect the marketability and value of the inventory. For example, if a significant portion of inventory represents finished '64' products, its total value may be severely affected by the introduction of the 128 line. Further analyses of the composition of inventory and the rationale for the 1985 inventory writedown may be desirable.

Further information will be required before the liquidation value of other major asset categories (e.g., receivables, property, equipment) can be determined.

APPENDIX

Supplemental Information

Table A-1

AMIGA PRODUCT SPECIFICATIONS

Type:	**Desktop**
Main Processor/Speed:	**Motorola 68000/8MHz**
Other Processors:	**Custom sound and graphics chip set**
Main Memory (minimum/maximum):	**256 Kbytes/8.5 Mbytes**
Read-Only Memory:	**192 Kbytes**
Flexible Disk Storage:	**880 Kbytes, 3.5-inch; one internal, up to three external**
Rigid Disk Storage:	**20 Mbytes; external (to be available from third party)**
Tape Backup:	**20 Mbytes; external (to be available from third party)**
Expansion:	**Full 68000 external bus; 256-Kbyte RAM card slot**
Ports:	**NTSC (composite video); digital RGB; analog RGB; serial printer port; serial communications port; external disk drive port; 2 analog controller ports; 2 RCA stereo audio jacks**
Keyboard:	**89 keys; 10 function keys; help key; separate cursor keys; numeric pad; tilt adjustment**
Other Input Device:	**2-button mechanical mouse**
Display/Graphics:	**Color**
Text Resolution (characters):	**25 x 80 or 25 x 60 (low-resolution TV mode)**
Graphics Resolution (pixels):	**Low resolution--320 x 200; 320 x 400 High resolution--620 x 200; 640 x 400 (interlaced); "hold and modify" mode with 6 bit planes**
Maximum Colors:	**Low resolution--32 per horizontal screen line High resolution--16 per horizontal screen line**
Total Colors Available:	**4,096**

Table A-1 (Concluded)

Monitor Price:	$495
System Unit Weight:	12.5 pounds
System Unit Dimensions (H x W x D):	4.25 x 17.5 x 12.9 inches
Operating System:	Amiga DOS (proprietary)
Bundled Software:	Operating system; ABasiC; system demos; SpeechCraft (speech-to-text package); Amiga Tutor
Base Configuration/Price:	256 Kbytes RAM, one 3.5-inch flexible disk drive, RGB monitor/ $1,790
Typical Enhanced Configuration/ Price:	512 Kbytes RAM, two 3.5-inch flexible disk drives, RGB monitor/$2,280
Warranty:	90 Days
Date Announced:	July 23, 1985
First Shipment:	September 15, 1985

Table A-2

PERSONAL COMPUTER OFFERINGS, CHRISTMAS 1985

Company	PC Model No.	Price	Memory
IBM	PC AT	$5,995[1]	30 MB hard drive 512K memory
Apple	Macintosh	$2,499	512K memory
IBM	PC	$1,995	1 floppy disk drive 256K memory
Commodore	Amiga	$1,895 with color monitor $1,295 with black and white monitor	256K memory
Apple	IIC	$1,249 with color monitor $995 with black and white monitor	128K memory
Atari	520 ST	$999.95 with color monitor $799.95 with black and white monitor	512K
Apple	IIe	$995 without monitor	128K
IBM	PC Jr	$725 with disk drive $599 without disk drive	
Commodore	128	$299.95 without monitor or disk drive	128K
Commodore	64	$149 without monitor or disk drive	64K

[1]IBM prices do not include monitors.

Table A-3:

Amiga Application Software Announced at Product Introduction
(23 July, 1985)

Title	Developer	Publisher	Availability
Languages and Development Tools			
Amiga Assembler	Metacomco	Commodore	September
Amiga C Compiler	Lattice	Commodore	September
Amiga Lisp	Metacomco	Commodore	September
Amiga Pascal	Metacomco	Commodore	September
Amiga TLC LOGO	LISP Co.	Commodore	October
Turbo Pascal	Borland International	Borland	November
Turbo Tutor	Borland International	Borland	1st Qtr 86
Turbo Toolbox	Borland International	Borland	1st Qtr 86
Turbo Graphics	Borland International	Borland	1st Qtr 86
Sidekick	Borland International	Borland	1st Qtr 86
Productivity Applications			
Enable Office Manager	The Software Group	Commodore	December
Enable Write	The Software Group	Commodore	September
Enable Calc	The Software Group	Commodore	October
Enable File	The Software Group	Commodore	November
Rags to riches	Chang Laboratories	Commodore	October
Calcraft	Synapse/Borland	Commodore	November
Textcraft	Arktronics	Commodore	September
Financial Cookbook	Electronic Arts	Electronic Arts	November
Perfect Writer	Thorn EMI	Thorn EMI	no date
Perfect Calc	Thorn EMI	Thorn EMI	no date
Perfect Filer	Thorn EMI	Thorn EMI	no date
Ensemble	Hayden	Hayden	1st Qtr 86
Sylvia Porter Financial Planner		Timeworks	1st Qtr 86
Sylvia Porter Personal Investment Manager		Timeworks	1st Qtr 86
Evelyn Wood Dynamic Reader		Timeworks	1st Qtr 86
Swiftcalc with Sideways		Timeworks	1st Qtr 86
Data Manager		Timeworks	1st Qtr 86
Cornerstone	Infocom	Infocom	1st Qtr 86
Creative Writer	Creative Software	Creative Software	no date
Creative Filer	Creative Software	Creative Software	no date
Creative Calc	Creative Software	Creative Software	no date
Creative Finance	Creative Software	Creative Software	no date
Graphics Applications			
Chartcraft	Island Graphics	Commodore	October
Moviecraft	Island Graphics	Commodore	October
Graphicraft	Island Graphics	Commodore	October
Graphicraft Pro	Island Graphics	Commodore	October
Video Construction Set	Electronic Arts	Electronic Arts	November
Printing Construction Set	Electronic Arts	Electronic Arts	November
Paint Program	Electronic Arts	Electronic Arts	November
Printshop	Broderbund	Broderbund	October

Table A-3 (Continued)

Title	Developer	Publisher	Availability
Communications			
Telecraft	Software 66	Commodore	October
Perfect Link	Thorn EMI	Thorn EMI	no date
Educational			
Roll Call USA	Creative Software	Creative Software	no date
SAT	CBS Software	CBS software	1st Qtr 86
Music Applications			
Musicraft	Everyware	Commodore	October
Harmony	Cherry Lane	Commodore	September
Instant Music	Electronic Arts	Electronic Arts	November
Music Construction Set	Electronic Arts	Electronic Arts	December
Keyboard Cadette	Mindscape	Mindscape	January 86
Sound Vision	Hayden	Hayden	November
Music Studio	Activision	Activision	October
Texture	Cherry Lane	Cherry Lane	September
Scorewriter	Cherry Lane	Cherry Lane	January 86
CZ-Rider	Cherry Lane	Cherry Lane	October
Personal Musician	Creative Software	Creative Software	no date
Entertainment			
Flight Simulator	Bruce Artwick	Commodore	January 86
One-on-One	Electronic Arts	Electronic Arts	September
Archon	Electronic Arts	Electronic Arts	September
Seven Cities of Gold	Electronic Arts	Electronic Arts	September
Desert Fox	Electronic Arts	Electronic Arts	October
Return to Atlantis	Electronic Arts	Electronic Arts	October
Sky Fox	Electronic Arts	Electronic Arts	October
Marble Madness	Electronic Arts	Electronic Arts	November
Adept (Archon II)	Electronic Arts	Electronic Arts	December
The Halley Project	Mindscape	Mindscape	January 86
Welcome Aboard	Broderbund	Broderbund	October
Mindwheel	Synapse	Synapse	November
Wyndwalker	Synapse	Synapse	November
Zork I	Infocom	Infocom	September
Zork II	Infocom	Infocom	September
Zork III	Infocom	Infocom	September
Deadline	Infocom	Infocom	September
Starcross	Infocom	Infocom	September
Suspended	Infocom	Infocom	September
Witness	Infocom	Infocom	September
Planet Fall	Infocom	Infocom	September
Enchanter	Infocom	Infocom	September

Table A-3 (Concluded)

Title	Developer	Publisher	Availability
Infidel	Infocom	Infocom	September
Sorcerer	Infocom	Infocom	September
Sea Stalker	Infocom	Infocom	September
Cutthroats	Infocom	Infocom	September
Suspect	Infocom	Infocom	September
Hitchhiker	Infocom	Infocom	September
Wishbringer	Infocom	Infocom	September
Air Defense	Creative Software	Creative Software	no date
Trolls and Tribulation	Creative Software	Creative Software	no date
Break Street	Creative Software	Creative Software	no date
Maze	Creative Softwa:	Creative Software	no date
Pando Wars	Creative Softwar	Creative Software	no date
Warp	Creative Softwar.	Creative Software	no date
Torpedo Junction	Creative Software	Creative Software	no date
Conquest of India	Creative Software	Creative Software	no date

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